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Transportation Report

Dungeness Roads Management

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Transportation Report

Introduction

This report summarizes the estimated costs and relative effects to implement the project on the transportation network described in Chapter 1 of the Dungeness Roads Management EA. Refer to Chapter 2 of the EA for detailed descriptions of the proposed alternatives, a description of road maintenance levels (ML), and treatment descriptions.

The Olympic National Forest (ONF) manages over 2000 miles of road system that provides access to lands managed for a variety of uses including recreation, commercial (including timber harvest), habitat management and restoration, as well as other administrative uses. Most of this road system was constructed prior to 1990, and used primarily for managing timber and logging.

Significant policy changes (in road management) beginning with the 1994 NW Forest Plan and continuing with new direction for roads and travel management in 2001 and 2005 have changed the way we assess and manage roads. These changes include updating standards and guidelines, integrating science based analysis, and finding a balance between need for access, risk, potential for environmental impacts, and financial capacity. In sum, each National Forest is required to use a science-based analysis to identify a minimum road system that is ecologically and financially sustainable.

History and Background – from ONF Travel Analysis Report (ONF TAR; USDA 2015)

1999 Roads Analysis

In 1999, the Forest Service produced a document entitled Roads Analysis: Informing decisions about managing the National Forest Transportation System. This document outlined an analysis process and suggested methods for analyzing a Forest's transportation system. Key elements include a science-based analysis with an emphasis on balancing the needs for access, the environmental risks associated with operating and maintaining the road system, and the financial capacity of the Forest Service unit.

2000 Road Management Strategy

The Olympic National Forest Road Management Strategy (RMS) was completed in 2000. It was driven by the need to prioritize limited watershed restoration, decommissioning, and road maintenance funds across district boundaries and across watersheds with a range of resource issues, hazards, risks, and values. The RMS analysis was one of the first road analysis processes (RAP) conducted at a Forest-wide scale. It was subsequently used in national RAP trainings as a good example of a science-based analysis balancing access needs and risk.

The RMS analysis was conducted at the Forest-wide scale and included all roads on the Forest road system. It evaluated five factors for each road segment and four additional factors at the broader watershed scale. Each factor was assigned a High, Moderate or Low value based on a

series of attributes. For example, the Aquatic Risk Factor was created using the five individual elements of geologic hazard, delivery potential or proximity, stream crossing density, riparian zone proximity, and up-slope hazard. The elements were weighted by relative importance using professional judgement. The results were validated by comparing the model results with information from a recent Watershed Analysis. The RMS factors were then integrated into combinations of risk and needs that described various road management opportunities. The resulting process was applied consistently across the Forest. The RMS has formed the framework for all subsequent analyses and Access and Travel Management Planning on the Forest.

2003 and 2007 Access and Travel Management

The 2003 Access and Travel Management (ATM) started with the RMS and added on-the-ground knowledge and professional judgment from most of the resource specialists on the Ranger Districts to provide a more site-specific understanding of the road system. Interdisciplinary Teams on each Ranger District integrated information and site-specific knowledge and developed recommendations for current and future management for each road on the Forest road system. The proposed management recommendations were shared with the public. After substantial public comment, final recommendations were developed for each road and published on the Forest's website. The final product included a list of all roads by operational maintenance level (ML), objective ML, risk, and need. In 2007, the ATM was updated for the South Fork Skokomish River watershed following the 2004 South Fork Skokomish Watershed Restoration Summary.

2015 Olympic National Forest Travel Analysis

The Olympic National Forest Travel Analysis Process (TAP) was conducted road-by-road at the Forest-wide scale. This is consistent with the previous Road Management Strategy and Access and Travel Management conducted in 2003 and 2007. These prior analyses followed the 2000 RAP, are considered science based, and evaluated the entire road network (Operational MLs 1 through 5).

The Objective ML is the ML planned to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The Objective ML's referenced in the 2015 ONF Travel Analysis Report (TAR) were generated from prior district level Access and Travel Management (ATM) plans.

The analysis expands and extends the previous analyses summarized in the History of Recent Transportation Analysis on the Olympic National Forest above. New information was incorporated and more detailed assessments were conducted, especially for Recreation Access Needs, Silviculture Access Needs, Aquatic Risk, Terrestrial Risk, and Road Maintenance Cost. Extensive public information gathering and outreach to Tribal Governments, partners, and adjacent landowners was conducted during 2014 and incorporated into this TAP. The TAP was also informed by the 2007 ATM update in the South Fork Skokomish; recently completed Watershed Restoration Action Plans for the South Fork Skokomish River, Calawah River, and Dungeness River watersheds; and recent NEPA decisions for road closure and decommissioning in the South Fork Skokomish and Calawah Watersheds.

The objective of the analysis was to provide scientific information for managing a transportation system that is safe and responsive to public needs, conforms to the Olympic National Forest Land and Resource Management Plan, in balance with funding available for needed management actions, and minimizes resource risk.

The TAP was intended to be a broad scale comprehensive look at the transportation network. The main objectives of the TAP were to:

- Identify opportunities for making changes to the forest transportation system that balance the need for access while minimizing risks by examining important ecological, social, and economic issues related to roads;
- Develop maps, tables, and narratives that display transportation management opportunities and strategies that address current and future access needs, and environmental concerns;
- Identify the need for changes by comparing the current road system to the desired condition;
- Identify opportunities for change that can inform travel management decisions in subsequent NEPA documents; and
- Provide a list of opportunities and analysis background necessary for the identification of a minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands per 36 CFR 212. 5(b)(1).

The analysis area for the transportation analysis process encompassed all Forest Service roads within the Olympic National Forest.

Financial Capacity to Meet Maintenance Needs

Forest Service road budgets have been steadily declining for the past 20 plus years. Region-wide, the amount of funding for road work including both appropriated funding and work contributed by commercial users is less than 20 percent of what it was 20 years ago. Appropriated road funds to the Pacific Northwest Region (Region 6) have been reduced 40% between 2010 and 2015. The current annual level of funding for road work on the Olympic National Forest (average of 2010 – 2014) was \$552,000 in 2015, which equates to \$648,000 in 2022\$. The estimated annual maintenance budget needed to keep the 1413 miles of current open road system maintained is around \$3.4 million, including estimated administration costs. Thus, the funding for road maintenance is currently about 19% of what is needed and is expected to decrease given current budget trends.

With funds being far below what is necessary to keep the road system properly maintained, many roads do not get the maintenance treatments they need on schedule and are falling into a severe state of disrepair. Furthermore, the majority of roads were constructed more than 30 years ago. Many are at or near the end of their design life without substantial reconstruction. Years of

reduced funding for annual maintenance has increased the backlog of deferred maintenance and increased the cost of reconstruction needed to bring the roads to commercial and haul standards.

Annual Maintenance is defined as “work performed to maintain serviceability, or repair failures during the year in which they occur. It includes preventive and/or cyclic maintenance performed in the year in which it is scheduled to occur”, (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998).

Deferred Maintenance is defined as “maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value”, (Financial Health - Common Definitions for Maintenance and Construction Terms, July 22, 1998).

Since 1999, the Forest Service has been tracking the amount of the deferred maintenance backlog. Table 1 shows the accumulated totals for deferred maintenance (DM) and the annual maintenance (AM) needs that would be required to keep the 1413 miles of open NFS roads fully maintained to standard (not including administration costs). These costs are derived from average National Unit Costs and include a burden rate of approximately 40% to cover planning, contracting, and all other overhead costs associated with returning the road system components to an original “like new” condition. The average maintenance cost/mile by ML is shown in Appendix A.

Table 1. Maintenance Costs: from 2015 ONF TAR, adjusted for 2022\$. DM – Deferred Maintenance, AM = Annual Maintenance. Basis: 1413 miles Maintenance Levels 2-4 on ONF

		Average	Average - Olympic	
ML's	DM - Total	DM \$/mi	AM-Total	AM \$/mi
2 thru 4	\$50,141,185	\$35,486	\$3,171,960	\$2,244

For the Olympic National Forest, it would take approximately \$50 million (2022\$) to bring the entire road system back up to standard. Note that the unit costs used to arrive at the figures are made up of national averages to restore and maintain the road system in a like new condition. They also include the cyclical items necessary to replace gravel surfacing, pavement overlays, bridges/structures, and major culverts on schedule.

Using Regional unit costs, without the national burden rate, the current estimate for annual maintenance needs to keep the existing Olympic National Forest road system maintained to standard would be about \$3.2 million (2022\$) per year for contracted work. Oversight and administration would require an additional \$247 thousand (2022\$) per year. Over the past 5 years, the Olympic National Forest has only received about \$648 thousand (2022\$) per year for road maintenance contracts and work on the ground. This is only about 19% of the funding necessary to address the estimated annual maintenance needs to maintain the road system, and does not address the substantial deferred maintenance needs.

Given the current backlog of deferred maintenance, there has been an increasing trend in emergency road repairs due to structure failures and road surface and prism degradation, and an increase in the potential for detrimental environmental impacts due to road prism failures and increased risk to the public.

Funding Sources

Funding for road maintenance primarily comes from appropriated budgets and includes sources such as CMRD, CWF2, SRS2, and receipts and appraisals from NFTM (timber). Funding for road decommissioning, road stabilization, treatments needed to convert a road to ML status, and fish passage barrier corrections generally comes through other sources such as Legacy Roads and Trails (CMLG), SDRR, ERFO, and partnerships with other agencies or watershed restoration groups.

The Emergency Relief for Federally Owned Roads Program, or ERFO Program, was established to assist federal agencies with the repair or reconstruction of federally owned roads that are open to public travel that have suffered serious damage by a natural disaster over a wide area or by a catastrophic failure. The intent of the ERFO program is to pay the unusually heavy expenses for the repair and reconstruction of eligible facilities. (<https://flh.fhwa.dot.gov/programs/erfo/>).

Proposed Actions and Alternatives Analyzed

The proposed action (Alternative A) is described in detail in Chapter 2 of the Dungeness Roads Management EA, along with Alternative B and a No Action alternative.

Methodology

The transportation network identified for proposed treatments in the draft 2012 Dungeness Watershed Action Plan (ONF WRAP MDRW; USDA 2012) was field reviewed by the Olympic National Forest (ONF) Transportation Planner. A total of 5 field days were spent in the planning area in summer and fall of 2016. A summary of field notes is in Appendix B. Approximately 95% of the proposed road segments were evaluated for likelihood to be used for future management activities, and potential for risk to resources. The general conditions and factors used for risk evaluation included: proximity to plantations, location on hillslope topography, presence of landslide activity and landslide risk, steepness of topography, connectivity of road prism drainage to streams, presence of stream crossings with deep fills (over 5 feet in height), stream diversion potential, road surface and drainage structure condition, and the current state of vegetative growth on the road prism (SDRRGLVR; USDA 2013).

Based on field observations, a recommendation was made for an alternative proposal (Alternative B) that would include consideration for future management activities with an emphasis on more miles of road closures versus decommissioning, improvement and expansion of recreational trailheads, access for management and protection of Taylor Checkerspot Butterfly habitat and invasive weed control, and decommissioning and conversion to trail of a chronic landslide-prone road segment.

Cost estimates to implement the two action alternatives were primarily developed from the base road management costs in the ONF Travel Analysis Report (ONF TAR; USDA 2015). Road maintenance cost reflects the potential cost of ownership based on road operation and maintenance history and needs. It can also be considered an indicator for damage potential during storms. Six factors were used as principle considerations for this resource evaluation:

- cost and/or frequency of maintenance
- performance history
- storm damage history
- terrain or location considerations
- construction method
- road age

Funding for road decommissioning, road stabilization, treatments needed to convert a road to ML1 status, and culvert fish passage barrier corrections generally comes through other sources such as Legacy Roads and Trails funding (CMLG), SDRR, ERFO, and partnerships with other agencies or watershed restoration groups. Historic costs were used to estimate the general capital costs for conversion of a road to ML1 or decommissioning in the 2015 ONF TAR. The cost basis came from historical contract information, and engineering estimates (Shelmerdine, June 20, 2017). These costs include all standard cost items that would be common for this type of activity, except for pre-construction or administration, and include (as needed and appropriate):

- seeding, mulching and revegetation of disturbed soils
- sediment mitigation measures
- all necessary equipment to perform the work
- excavation and removal of structures from USFS lands
- clearing, grubbing, excavation
- sidecast excavation and removal
- drainage and cross-ditch installation
- removal of surfacing
- scarification
- rock: riprap, grade control weirs
- installation of a berm and/or barrier

Other costs that were not included in the 2015 ONF TAR were derived from current contract prices for the ONF, east side road maintenance contract. All costs were adjusted with a Consumer Price Index factor to approximate the cost for implementation in 2022.

Analysis Indicators

The analysis indicators used to evaluate the alternatives include estimates for the total cost to implement based on miles of National Forest System (NFS) roads to decommission and/or convert to trail, miles of NFS roads to close (ML1), estimated cost to reopen closed roads (ML1)

for future use, and estimated cost to implement proposed near-future management activities, including an annual maintenance cost over the next 10 years. The potential cost of deferred maintenance is also discussed.

Spatial and Temporal Bounding of Analysis Area

The scale for this analysis is approximately 35 miles of NFS system roads located within the 106,856 acre Dungeness Roads project area. A Vicinity Map is included in the EA. A potential exists for implementation to begin in FY18 and will depend upon available funding and staffing resources.

Table 2 illustrates the scope of the project proposals relative to the analysis area and the entire Olympic National Forest transportation system in terms of road miles by maintenance level.

Table 2. Project proposals relative to NFS road miles in the analysis area and across the ONF

Operational Maintenance Level (ML)	Current ONF Road System Miles (Operational)	% of Current Road System	Analysis Area Road Miles (Operational)	Proposed Project Road Miles - Alt A	Proposed Project Road Miles - Alt B	Proposed Project Roads - Alt A		Proposed Project Roads - Alt B	
						% of Analysis Area Road Miles Totals	% of ONF Road System Miles	% of Analysis Area Road Miles Totals	% of ONF Road System Miles
C	0	0	0	1.40	1.40	0.9%	0.1%	0.9%	0.1%
D	0	0	0	15.88	5.11	10.0%	0.8%	3.2%	0.3%
ML - 1	607	30.0%	5	14.09	27.13	8.9%	0.7%	17.1%	1.3%
ML - 2	1015	50.2%	105	1.60	1.60	1.0%	0.1%	1.0%	0.1%
ML - 3	321	15.9%	48	0.01	0.01	0.0%	0.0%	0.0%	0.0%
ML - 4	77	3.8%	0	0.00	0.00	0.0%	0.0%	0.0%	0.0%
Total All Roads	2020	100.0%	158	33	35	20.8%	1.6%	22.3%	1.7%
Total ML 2 - 4 Roads	1413	70.0%	153	2	2	1.0%	0.1%	1.0%	0.1%
Total ML 1, D, C	607	30.0%	5	31	34	19.8%	1.6%	21.3%	1.7%

The percentage of road miles affected by each alternative relative to the entire ONF road system is similar (1.6% and 1.7%). Alternative A impacts slightly less overall road miles in the Analysis Area as compared to Alternative B (20.8% vs. 22.3%). Alternative A has slightly less total proposed closed or decommissioned road miles in the Analysis Area as compared to Alternative B (19.8% vs. 21.3%).

Affected Environment

The affected environment includes existing NFS road systems within the project area. Table 3 is a summary of current NFS road segments affected by each alternative, and for general comparison, the objective maintenance level referenced in the 2015 ONF TAR recommendation for a Sustainable Roads Strategy (SRS). Activities included in the proposed alternatives include proposed decommissioning and/or conversion to trail, proposed road closures (change to a ML1 from a ML2), relocate and/or improve recreational trailhead parking areas, and maintain access for management and protection of Taylor Checkerspot Butterfly habitat and invasive weed control.

As a result of a declining road management budget (2015 ONF TAR) there is a current backlog of road maintenance on NFS roads on the forest. There is a continued deterioration in the overall road conditions within the project area due to inadequate funding and resources to address all of the historical and current road maintenance needs, and this trend is expected to continue into the near future (2015 ONF TAR). Table 1 summarizes the averaged deferred maintenance and annual maintenance costs for the ONF.

Table 3. NFS road segments affected by alternatives. ML = Maintenance Level. ObjML = Objective ML. DREA = Dungeness Roads Management EA. TAR = Travel Analysis Report.

			Segment Distance (Miles)	Operational (Current) ML	DREA Proposal Alt A Obj ML	DREA Proposal Alt B Obj ML	2003 and 2007 ATM	2015 ONF TAR
Road	BMP	EMP					Obj ML	U = Likely Unneeded N = Needed
2800220	0	1.203	1.203	2	1	1	-	-
2800220	0	0.6	0.6	2	1	1	2	N
2800220	0.6	1.203	0.603	2	1	1	2	U
2800260	0	1.2	1.2	2	1	1	2	N
2800262	0	0.6	0.6	2	1	1	C	N
2800280	0	0.51	0.51	2	1	1	-	-
2800280	0	0.3	0.3	2	1	1	C	N
2800280	0.3	0.51	0.21	2	1	1	C	U
2800283	0	0.3	0.3	2	1	1	C	N
2800290	0	0.3	0.3	2	1	1	C	N
2800320	0	2.6	2.6	2	1	1	-	-
2800320	0	2.1	2.1	2	1	1	2	N
2800320	2.1	2.6	0.5	2	1	1	2	U
2800321	0	1.2	1.2	2	1	1	2	U
2800325	0	0.57	0.57	2	1	1	2	N
2820010	0	3.1	3.1	2	1	1	2	N
2870000	19.9	19.901	0.001	3	3	3	3	N
2870000	19.901	21.4	1.499	3	D	-	C	N
2870000	19.901	21.1	1.199	3	D	1	C	N
2870000	21.1	21.4	0.3	3	D	D	C	N
2870030	0	0.4	0.4	2	1	1	2	N
2870030	0.4	1.7	1.3	2	D	1	2	N
2870150	0.8	1.4	0.6	2	D	-	-	-
2870150	0.8	1.2	0.4	2	D	1	2	U
2870150	1.2	1.4	0.2	2	D	D	2	U
2870155	0	0.5	0.5	2	D	1	D	U
2870230	0	0.01	0.01	3	3	3	3	N
2870230	0.01	0.86	0.85	3	C	C	3	N
2870230	0.86	1.41	0.55	3	C	C	3	N
2870250	0	1.6	1.6	2	D	-	D	U
2870250	0	0.9	0.9	2	D	1	D	U
2870250	0.9	1.6	0.7	2	D	D	D	U
2870270	0	1.6	1.6	2	2	2	2	U
2870300	0	0.12	0.12	2	D	D	C	U
2875020	0	0.63	0.63	2	D	1	D	N

2875070	0	1.8	1.8	2	D	-	-	-
2875070	0	1.2	1.2	2	D	1	-	-
2875070	1.2	1.8	0.6	2	D	D	-	-
2875070	0	0.7	0.7	2	D	-	C	N
2875070	0.7	1.8	1.1	2	D	-	C	U
2877000	2.63	4.6	1.97	2	-	1	2	N
2877050	0	0.2	0.2	2	1	1	-	-
2877050	0.2	0.9	0.7	2	D	-	-	-
2877050	0.9	2.65	1.75	2	D	-	-	-
2877050	0	0.4	0.4	2	-	1	2	N
2877050	0.4	0.9	0.5	2	D	1	2	U
2877050	0.9	2.1	1.2	2	D	D	2	N
2877050	2.1	2.65	0.55	2	D	D	2	U
2877052	0	0.29	0.29	2	1	1	D	N
2877090	0	1.38	1.38	2	D	-	-	-
2877090	0	1.07	1.07	2	D	1	-	-
2877090	1.07	1.38	0.31	2	D	D	-	-
2877090	0	0.6	0.6	2	D	1	D	N
2877090	0.6	1.38	0.78	2	D	-	D	U
2877100	0	0.3	0.3	2	-	1	D	N
2877140	0	0.2	0	1	-	1	1	N
2877150	0	0.26	0	1	-	1	1	N
2877160	0	0.1	0	1	-	1	1	N
2878050	0	0.6	0.6	2	D	D	D	U
2878060	0	0.8	0.8	2	D	1	D	N
2878080	0	0.72	0.72	2	1	1	2	N
2878080	0.72	1.04	0.32	2	D	1	-	N
2878080	0.72	1.01	0.29	2	D	1	2	N
2878080	1.01	1.04	0.03	2	D	1	D	U
2878081	0	0.26	0	-	D	D	-	-
2878085	0	0.9	0.9	2	1	1	2	N
2878100	0.75	1.59	0.84	2	D	D	2	N
2878108	0	0.13	0.13	2	D	D	2	N
2878109	0	0.27	0.27	2	D	D	2	N
2878110	0	0.9	0.9	2	D	D	D	N
2878115	0	0.14	0.14	1	D	D	D	N

Environmental Consequences

No Action

The No Action alternative is the baseline of existing road conditions for comparison with the other alternatives. Under this alternative, there would be no activities to stabilize, store, or

decommission NFS roads. Also, there would be no activities to improve trailhead areas, or to protect Taylor Checkerspot Butterfly habitat.

Direct Effects and Indirect Effects

The No Action alternative would have the least short term impact on access, and no immediate costs. All existing roads would be left in the same condition they are in now, and there will be no closure or decommissioning of NFS roads within the project area. This would result in a loss of opportunity to improve active mitigation of potential sources of sediment delivery from the existing transportation network from surface erosion and failing structures. As a result, the backlog of deferred maintenance needs would likely continue to increase and the condition of the transportation infrastructure would likely continue to deteriorate. This would potentially increase the risk to public safety by not maintaining the current road standards due to shortfalls in maintenance funding and an increased potential in road surface and structure failures, also. This alternative would not move the forest towards a sustainable transportation network as outlined in the 2015 ONF TAR, nor would it bring this area closer to meeting the standards and guidelines for road management identified by the Forest Plan.

Cumulative Effects

The levels of road maintenance and motorized access would continue at current levels. However, availability of access into this area could potentially decline due to continued lack of funding for maintenance of the roads (i.e. vegetation takeover, drainage structure failure, road washout, etc.), and increase the risk to public safety. The cumulative effects related to deferred road maintenance costs for the entire road system would continue to increase, and there is potential for an increase in sediment delivery due to a continued decline in road surface and road drainage integrity, road prism failures, and a lack of mitigation of known landslide risks. To address the deferred road maintenance backlog and bring the 35 miles of road up to standard to meet public safety requirements and protect the transportation infrastructure would cost an estimated \$1,242,997 (2022\$) under this alternative.

Alternative A – Proposed Action

The description of this alternative is in Chapter 2 of the EA. This alternative includes relocation and improvement of two trailheads (Figure 2, Figure 3). Table 3 summarizes the road segments proposed for treatment by each action alternative.



Figure 1. Proposed limitations on parking access 2870270 Road

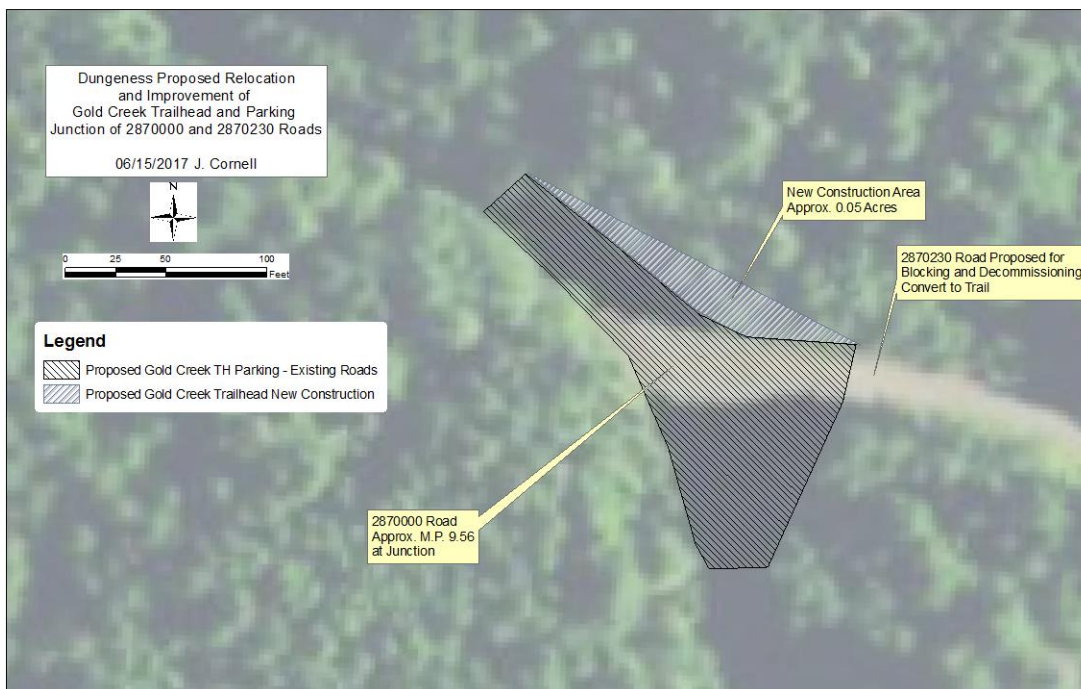


Figure 2. Relocation of Gold Creek Trailhead at junction of 2870000 and 2870230 Roads

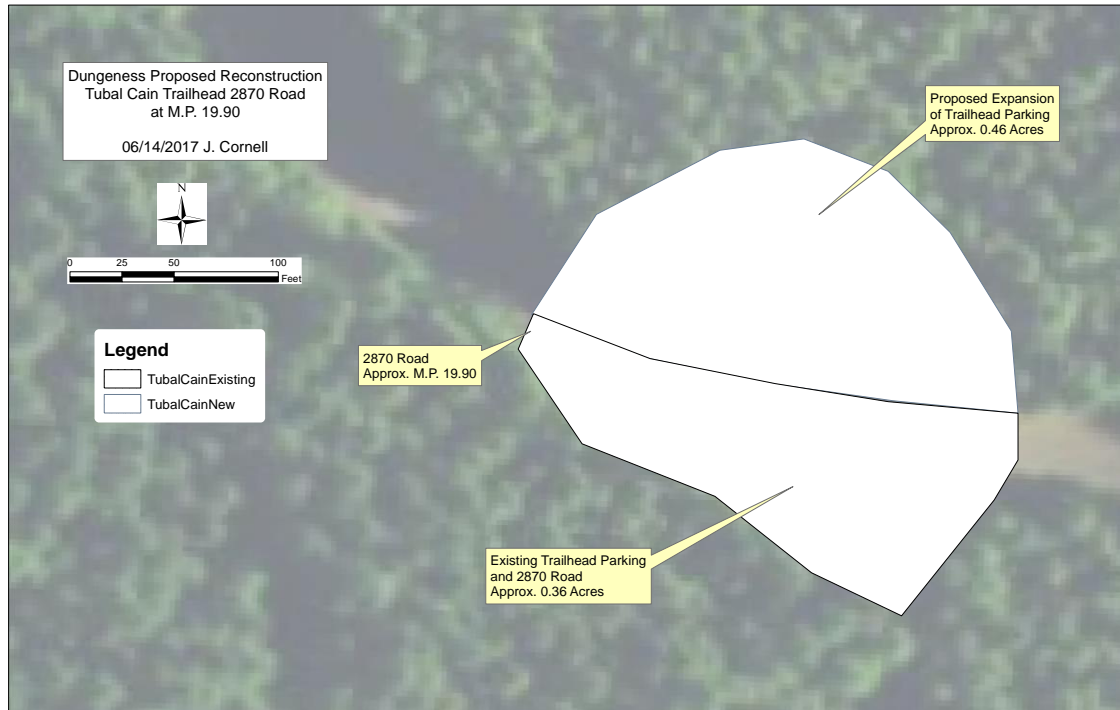


Figure 3. Proposed reconstruction of Tubal Cain Trailhead 2870000 Road

CMLG Project Proposals

There are approximately 5.9 miles of roads that were proposed for treatment through the Legacy Roads and Trails program (CMLG) in FY17 – FY19 (Pena letter, June 2016). Table 4 is a summary of the roads that were proposed for this capital investment funding source.

Table 4. Roads proposed for treatment with CMLG funding

			Segment Distance	No Action		
Road Number	BMP	EMP	(Miles)	ML	Alt A - ML	Alt B - ML
2875020	0	0.63	0.63	2	D	1
2875070	0	1.2	1.2	2	D	1
2875070	1.2	1.8	0.6	2	D	D
2877050	0	0.2	0.2	2	1	1
2877050	0.2	0.9	0.7	2	D	1
2877052	0	0.29	0.29	2	1	1
2877090	0	1.07	1.07	2	D	1
2877090	1.07	1.38	0.31	2	D	D
2878110	0	0.9	0.9	2	D	D
Total			5.9	Miles		

Direct and Indirect Effects

Access to Other Ownerships

Alternative A has a moderate potential to impact long-term access to other land ownerships within the project area. Under this alternative, the 2870030 Road is proposed for decommissioning from m.p. 0.4 to 1.7. This has potential to impact access to the private land in Sec. 23, T. 29N., R.04W., W.M., and private and State lands to the north of the National Forest Boundary. The 2877050 Road is proposed for decommissioning from m.p. 0.2 to 2.65. This road crosses onto State lands at approximately m.p. 0.9 in Sec. 17, T.29N., R.04W., W.M. From m.p. 0.9 to 2.65 the road traverses State and private lands.

Administrative Access for Forest Management Activities

Alternative A would limit administrative access on several roads, and public access on one ML2 road. The 2800260 Road would be changed to a ML1 from a ML2 and would be inaccessible to motorized vehicle traffic. This road is used to access and maintain Taylor Checkerspot Butterfly habitat. The 2875070 Road would be decommissioned from m.p. 0.0 to 1.8. This road is used to access meadows for invasive weed control. The 2870270 Road would remain a ML2 road, but have vehicle turnaround access blocked near m.p. 1.6 to protect Taylor Checkerspot Butterfly habitat. This road would be closed to public motor vehicle access in accordance with a 36 CFR 261.54 order.

2870230 Storm Damage Repairs and Proposed Convert to Trail

See Chapter 2 of the EA, *Trailhead Reconstruction and Trail Conversion* for a detailed description.

Estimated Cost of Implementation

An estimate of costs to implement Alternative A is shown in Table 5. The costs have been adjusted with a CPI factor to reflect approximate values in the year 2022. Details for specific cost components are in Appendix A.

Deferred maintenance cost estimates were not included in the implementation estimate.

Table 5. Estimate of costs to implement proposed alternatives compared to current conditions and the 2015 ONF TAR SRS recommendations. DREA = Dungeness Roads EA. ML = Maintenance Level. All costs are adjusted to 2022 dollars.

<i>Capital Investments</i>					
		Operational (Current) ML	DREA Proposal Alt A - ML	DREA Proposal Alt B - ML	2003/2007 ATM Obj. ML
Decom/Convert =		-	\$148,025	\$148,025	\$542,299
Decommission =		-	\$1,678,918	\$540,291	\$758,098
Closure/Storage =		-	\$662,258	\$1,274,987	\$0
Subtotal			\$2,489,201	\$1,963,302	\$1,300,398
Reopen in Future ¹ =	ML1	-	\$1,057,544	\$2,035,995	\$0
for Restoration Projects					
These costs are general estimates:					
Gates (4)			\$0	\$40,000	\$0
Tubal Cain TH			\$30,000	\$30,000	\$0
Gold Creek TH			\$15,000	\$15,000	\$0
2870270 TCB Habitat Boulders			\$5,000	\$5,000	\$0
Subtotal			\$3,596,745	\$4,089,297	\$1,300,398
<i>Road Maintenance</i>					
Annual Maint Cost (yrs) ² =	10	\$123,114	\$5,129	\$5,282	\$77,733
Totals		\$123,114	\$3,601,874	\$4,094,579	\$1,378,131
Average Cost per Mile (\$/Mile)		\$3,492	\$109,204	\$116,148	\$39,093
¹ Does not include reopening the 2870230 Road in the future (1.4 miles)					
² Annual Maintenance Costs do not include the backlog of deferred maintenance/repairs; est. for 10 yrs					

Cumulative Effects

Of the 33 miles evaluated in Alternative A, 16 miles are proposed for decommissioning, 14 miles are proposed for a change to a ML1, 1.4 miles are proposed for conversion to trail, and 1.6 miles will remain at a ML2 with limited vehicle turn around access. This alternative would move the forest towards a sustainable transportation network as outlined in the 2015 ONF TAR. However with the high percentage of road decommissioning, this alternative has the greatest potential for a long-term impact on economic access for current and future forest management activities, such as habitat improvement for threatened and endangered species, management of invasive plant species, and fire suppression. It will further limit motorized public access to the forest and reduce

the risk of exposure of the public to roads that are not maintained to standard. This alternative would reduce the backlog of deferred maintenance through road closures and decommissioning by an estimated \$1,113,255 on 31 miles of system roads.

Alternative B

The description of this alternative is in Chapter 2 of the EA. This alternative also includes relocation and improvement of two trailheads (Figure 2, Figure 3). Table 3 summarizes the road segments proposed for treatment by alternative.

In addition, 4.37 miles of proposed ML1 roads would have limited gated access for protection and management of Taylor Checkerspot Butterfly habitat and control and treatment of invasive weeds. 1.6 miles of ML2 road would have a gated seasonal closure for protection of Taylor Checkerspot Butterfly habitat.

As with Alternative A, there are approximately 5.9 miles of roads that were proposed for treatment through the Legacy Roads and Trails funding (CMLG) in FY17 – FY19 (Pena letter, June 2016). Table 4 is a summary of the roads that were proposed for this capital investment funding source.

Direct and Indirect Effects

Access to Other Ownerships

Alternative B has a low potential to impact long-term access to other land ownerships within the project area. Under this alternative, the 2870030 Road is proposed for a change to ML1 (closure) from m.p. 0.0 to 1.7. This has limited potential to impact access to the private land in Sec. 23, T. 29N., R.04W., W.M., and private and State lands to the north of the National Forest Boundary, as they road may be reopened as needed for management activities. The 2877050 Road is proposed for ML1 from m.p. 0.0 to 2.65. This road crosses onto State lands at approximately m.p. 0.9 Sec. 17, T.29N., R.04W., W.M. From m.p. 0.9 to 2.65 the road traverses State and private lands. This has limited potential to impact access to these lands, as they road may be reopened as needed for management activities.

Administrative Access for Forest Management Activities

Alternative B would limit administrative access on several roads, and public access on one ML2 road. The 2800260 Road would be changed to a ML1 from a ML2, and be gated to allow limited administrative access to motorized vehicles. This road is used to access and maintain Taylor Checkerspot Butterfly habitat. The 2875070 Road would be changed to a ML1 from a ML2 from m.p. 0.0 to 1.2 and be gated to allow limited administrative access to motorized vehicles. This road is used to access meadows for invasive weed control. The 2870270 Road would remain a ML2 road, but have a gate for a seasonal closure to vehicle traffic from June 1-August 31, and have vehicle turnaround access blocked near m.p. 1.6 to protect Taylor Checkerspot Butterfly habitat. The 2877000 Road from m.p. 2.63 to 4.6 would be changed to a ML1 from a ML2, and be gated to allow limited administrative access to motorized vehicles. This road is used to access

meadows for invasive weed control. These roads would be closed to public motor vehicle access in accordance with a 36 CFR 261.54 order.

2870230 Storm Damage Repairs and Proposed Convert to Trail

Same as Alternative A.

Estimated Cost of Implementation

An estimate of costs to implement Alternative B is shown in Table 5. The costs have been adjusted with a CPI to reflect approximate values in the year 2022. Details for specific cost components are in Appendix A.

Deferred maintenance cost estimates were not included in the implementation estimate.

Cumulative Effects

Of the over 35 miles evaluated in Alternative B, 5 miles are proposed for decommissioning, 27 miles are proposed for a change to a ML1, 1.4 miles are proposed for conversion to trail, and 1.6 miles will remain at a ML2 with a seasonal gate closure and limited vehicle turn around access. This alternative would move the forest towards a sustainable transportation network as outlined in the 2015 ONF TAR. This alternative has a lower potential for a long-term impact on economic access for current and future forest management activities, such as habitat improvement for threatened and endangered species, management of invasive plant species, and fire suppression, due to fewer miles of fully decommissioned roads. As with Alternative A, it will further limit motorized public access to the forest and reduce the risk of exposure of the public to roads that are not maintained to standard. This alternative would reduce the backlog of deferred maintenance through road closures and decommissioning by an estimated \$1,193,807 on 34 miles of system roads, which is similar to Alternative A.

Summary of Effects

Table 5 shows the estimated average cost per mile to maintain the current miles of road classes, to implement the two action alternatives, and a comparison with the cost to implement the 2015 ONF TAR Sustainable Roads Strategy. These estimates do not include deferred maintenance.

The costs shown are valid costs for historic treatments, however for decommissioning, the average cost may represent more of the higher priority and higher cost roads in tough locations.

Table 6 summarizes the differences in the road class miles between current conditions, the proposed action alternatives, and the 2015 ONF TAR Sustainable Roads Strategy.

Table 6: Road class miles. ML = Maintenance Level. DREA = Dungeness Roads EA. TAR = Travel Analysis Report

Road Class by ML	Operational (Current) ML	DREA Proposal Alt A - ML	DREA Proposal Alt B - ML	2015 ONF TAR Objective ML
ML3	2.91	0.011	0.011	1.411
ML2	32.203	1.6	1.6	21.543
ML1	0.14	14.093	27.132	0
D	0	15.879	5.11	7.17
C	0	1.4	1.4	5.129
Total Miles Analyzed =	35.253	32.983	35.253	35.253
Total Miles System (NFS) Roads =	35.253	15.704	28.743	22.954
Total Miles Open Roads =	35.113	1.611	1.611	22.954

The No Action Alternative encompasses approximately 35 miles of NFS roads. Estimated annual maintenance cost needs over a 10 year period are \$123,114 (\$12,113/year), with an estimated deferred maintenance backlog of \$1.24 million. This alternative is unlikely to bring the NFS transportation system any closer to meeting the sustainable road system strategy, as the annual estimated maintenance costs exceeds the historical average annual maintenance budget. There would be an increase in public safety risk as the road system would continue to deteriorate due the lack of continuing maintenance and a lack of capacity to address deferred maintenance. This will likely lead to the road system not meeting the minimum travel standards, and increase the potential risk to resources through erosion, washouts, and landslides.

Under Alternative A approximately 33 miles of existing NFS roads would be addressed with an estimated capital investment cost of \$3.6 million, and an estimated maintenance cost over a 10 year period of \$5,129 (\$513/year). This proposed alternative has the greatest potential to impact future access needs for management by fully decommissioning nearly 16 miles of NFS roads. It has a lower annual maintenance cost than the No Action Alternative and Alternative B, and has an estimated cost of \$109,204/mile to implement. This alternative would reduce the need for approximately \$1.11 million dollars in deferred maintenance to bring system roads up to standard, and reduce the public safety risk and potential risk of resource impacts through road closure and decommissioning.

Consideration should be given to the relatively high cost for the potential use of decommissioned road prisms as temporary roads for management access in the future. The table *Estimated Average Cost to Reopen a Closed or Decommissioned Road* in Appendix A illustrates the average cost to reopen a decommissioned road versus a closed road (ML1), which is nearly double. In recent years, this Transportation Planner has observed there has been a trend to reopen previously decommissioned road prisms for use as temporary roads for management and restoration projects, which increases the cost of operations and may lead to economic infeasibility of many proposed projects.

Under Alternative B approximately 35 miles of existing NFS roads would be addressed with an estimated capital investment cost of \$4 million, and an estimated maintenance cost over a 10 year period of \$5,282 (\$528/year). This proposed alternative has the least potential to impact

future access needs from decommissioning, as 25 miles of low risk NFS roads would be put into ML1 (storage), and just under 7 miles of moderate/high risk roads would be fully decommissioned. Other differences from Alternative A include: An additional 2.3 miles of closure of ML2 to ML1 NFS roads to protect meadow and bog resources from vehicle access; 4.37 miles of ML1 roads that would have limited gated access for protection and management of Taylor Checkerspot Butterfly habitat and control and treatment of invasive weeds; and 1.6 miles of ML2 road would have a gated seasonal closure for protection of Taylor Checkerspot Butterfly habitat. The annual maintenance cost is slightly more than Alternative A and lower than the No Action Alternative, and has an estimated cost of \$116,148/mile to implement, assuming all ML1 roads would be reopened at some point in time in the future. This alternative would reduce the need for approximately \$1.19 million dollars in deferred maintenance to bring system roads up to standard, and reduce the public safety risk and potential risk of resource impacts through road closure and decommissioning.

The 2015 ONF TAR Sustainable Road System proposed treating 35 miles of existing NFS roads, with an estimated capital investment cost of \$1.3 million, and an estimated maintenance cost over a 10 year period of \$77,733 (\$7,773/year). It would keep 23 miles of ML2 and ML3 roads on the NFS system, and decommission and/or convert to trail 12 miles of roads. This has the lowest estimated relative total cost per mile (\$39,093/mile) to implement. This alternative would reduce the need for an estimated \$426,000 of deferred maintenance. However, with the historic and current budget trends, the annual road maintenance cost and deferred maintenance would not be fully funded or implementable, as with the No Action Alternative. There would be an increase in public safety risk as the road system would continue to deteriorate from a lack of continued maintenance and a lack of capacity to address deferred maintenance. This will likely lead to the road system not meeting the minimum travel standards, and also increase the potential risk to resources through erosion, washouts, and landslides.

Compliance with law, regulation, policy, and the Forest Plan (Heading 4)

Both proposed action alternatives would likely bring this area closer to meeting the standards and guidelines for road management identified by the Forest Plan (ONF Forest Plan; USDA 1990), and further implementation of the 2015 Olympic National Forest Travel Management Plan. As outlined in the Summary of Effects, Alternative A has the potential to reduce access for current and future habitat improvement and restoration for terrestrial species, and may increase the future cost to reopen or reuse road prisms for projects due to the amount of roads proposed for decommissioning versus closure compared to Alternative B.

The following are also included for reference.

1994 Northwest Forest Plan

The Standards and Guidelines for the transportation system from the 1994 Northwest Forest Plan (Section C. Standards and Guidelines, subsection C-32 Roads Management).

2015 Olympic National Forest Travel Analysis

In 2015, the ONF completed a Forest-wide Travel Analysis to meet the requirements for Travel Analysis in Subpart A of the 2005 Travel Management Rule as defined in 36 CFR 212 (b); with guidance provided in FSM 7700; FSH 7709.55, Chapter 20; and FSH 7709, Chapter 60. This analysis is intended to inform future decisions related to the ONF transportation network, but is not a decision document.

Literature Cited

Code of Federal Regulations 36 CFR 212

Forest Service Handbook for Road System Operation and Maintenance Handbook (FSH 7709 Chapter 60).

Forest Service Manual for Travel Management and Travel Planning (FSM 7700, Chapter 7710 Travel Planning).

Forest Service Handbook for Travel Management and Travel Planning (FSH 7709.55, Chapter 20 Travel Analysis).

Forest Service Handbook for Road System Operation and Maintenance Handbook (FSH 7709 Chapter 60).

USDA Forest Service. 2015. Olympic National Forest Forest-wide Travel Analysis Report. Olympia, Washington.

USDA Forest Service. 2013. Storm Damage Risk Reduction Guide for Low-Volume Roads. San Dimas Technology and Development Center.

USDA Forest Service. 2012. Watershed Restoration Action Plan for the Middle Dungeness River Watershed. Olympic National Forest.

USDA Forest Service. 1994. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents with the Range of the Northern Spotted Owl. Portland, Oregon.

USDA Forest Service. 1994. Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl. Portland, Oregon.

USDA Forest Service. 1990. Olympic National Forest Land and Resource Management Plan. Olympia, Washington.

Appendix A – Cost References

CPI Calculations

<http://www.free-online-calculator-use.com/cpi-calculator.html>

2015	1.0000	Rate:	17.48%	0.1748
2022	1.1700	CPI Factor:		1.1748
2017	1.0000	Rate:	13.14%	0.1314
2022	1.1314	CPI Factor:		1.1314

Annual Cost to Maintain NFS Roads

Operational Maintenance Level (ML)	Maintenance Level	Current ML Road Miles (Miles)	Project Road Miles - Alt A (Miles)	Project Road Miles - Alt B (Miles)	2015 SRS Road Miles (Miles)	Average Cost per Mile Analysis Area (\$/Mile) ¹
	Decommission	-	15.879	5.11	7.17	\$ -
	Convert to Trail	-	1.4	1.4	5.129	\$ -
ML - 1	1 - Basic custodial care	0.14	14.093	27.132	0	\$ 1.00
ML - 2	2 - Managed for high clearance vehicles	32.203	1.6	1.6	21.543	\$ 259.00
ML - 3	3 - Managed for moderate degree of comfort, suitable for passenger care	2.91	0.011	0.011	1.411	\$ 735.00
ML - 4	4 - Managed for moderate degree of comfort, stabilized aggregate	0	0	0	0	\$ 3,209.00
ML - 5	5 - Managed for high degree of comfort, paved	0	0	0	0	\$ -
	Total Miles	35.253	32.983	35.253	35.253	-
						2022\$ Totals =

¹Table K-5: 2015 ONF Travel Analysis, Scenario 3, Likely Needed Roads With Reduced Maintenance to an Affordable Level

²Table K-1: 2015 ONF Travel Analysis, Average 5 Year Road Maintenance Budget

Operational Maintenance Level (ML)	Maintenance Level	Current (\$)	Cost Alt A (\$)	Cost Alt B (\$)	Cost 2015 SRS (\$)
	Decommission	\$ -	\$ -	\$ -	\$ -
	Convert to Trail	\$ -	\$ -	\$ -	\$ -
ML - 1	1 - Basic custodial care	\$ 0.14	\$ 14.09	\$ 27.13	\$ -
ML - 2	2 - Managed for high clearance vehicles	\$ 8,340.58	\$ 414.40	\$ 414.40	\$ 5,579.64
ML - 3	3 - Managed for moderate degree of comfort, suitable for passenger care	\$ 2,138.85	\$ 8.09	\$ 8.09	\$ 1,037.09
ML - 4	4 - Managed for moderate degree of comfort, stabilized aggregate	\$ -	\$ -	\$ -	\$ -
ML - 5	5 - Managed for high degree of comfort, paved		\$ -	\$ -	\$ -
	Total Cost per Year	\$ 10,479.57	\$ 436.58	\$ 449.62	\$ 6,616.72
	2022\$ Totals =	\$ 12,311.40	\$ 512.89	\$ 528.21	\$ 7,773.33

¹Table K-5: 2015 ONF Travel Analysis, Scenario 3, Likely Needed Roads With Reduced Maintenance to an Affordable Level

²Table K-1: 2015 ONF Travel Analysis, Average 5 Year Road Maintenance Budget

Operational Maintenance Level (ML)	Maintenance Level	Estimated Funds Applied - Cost per Mile (\$/Mile) = \$273/mi ² (estimated through recent maintenance contracts) Curr	Estimated Funds Applied - Cost per Mile (\$/Mile) = \$273/mi ² (estimated through recent maintenance contracts) Alt A	Estimated Funds Applied - Cost per Mile (\$/Mile) = \$273/mi ² (estimated through recent maintenance contracts) Alt B	Estimated Funds Applied - Cost per Mile (\$/Mile) = \$273/mi ² (estimated through recent maintenance contracts) SRS
	Decommission	-	-	-	-
	Convert to Trail	-	-	-	-
ML - 1	1 - Basic custodial care	-	-	-	-
ML - 2	2 - Managed for high clearance vehicles	-	-	-	-
ML - 3	3 - Managed for moderate degree of comfort, suitable for passenger care	-	-	-	-
ML - 4	4 - Managed for moderate degree of comfort, stabilized aggregate	-	-	-	-
ML - 5	5 - Managed for high degree of comfort, paved	-	-	-	-
	Total Average Budget per Year	Total Average Budget per Year	Total Average Budget per Year	Total Average Budget per Year	Total Average Budget per Year
	\$ 9,585.85	\$ 439.80	\$ 439.80	\$ 6,266.44	
	\$ 11,261.46	\$ 516.68	\$ 516.68	\$ 7,361.82	

¹Table K-5: 2015 ONF Travel Analysis, Scenario 3, Likely Needed Roads With Reduced Maintenance to an Affordable Level

²Table K-1: 2015 ONF Travel Analysis, Average 5 Year Road Maintenance Budget

Estimated Average Cost to Decommission, Close or Convert

Average Cost	Low Average \$/Mile	High Average \$/mile	Ave \$/Mile	Ave \$/Mile (2022\$)
Storage (ML1)	\$ 20,000.00	\$ 60,000.00	\$ 40,000.00	\$ 46,992.00
Decommission (D)	\$ 60,000.00	\$ 120,000.00	\$ 90,000.00	\$ 105,732.00
Convert to Trail [C]	\$ 60,000.00	\$ 120,000.00	\$ 90,000.00	\$ 105,732.00

¹Table K-6: 2015 ONF Travel Analysis Report Estimated Capital Costs

Estimated Average Cost to Reopen a Closed or Decommissioned Road

Reopen as Temp Road	Low Average \$/Mile	High Average \$/mile	Ave \$/Mile ²	Ave \$/Mile (2022\$)
ML1 to ML2	\$ 57,816.00	\$ 69,934.00	\$ 63,875.00	\$ 75,040.35
D to ML2	\$ 96,934.00	\$ 131,840.00	\$ 114,387.00	\$ 134,381.85
C to ML2	\$ 96,934.00	\$ 131,840.00	\$ 114,387.00	\$ 134,381.85

¹Temporary Road Cost Estimates, North Fork Calawah Vegetation Management Transportation Plan, 2015

²Includes cost to close temporary road upon completion of project

[illegible]

Estimated Cost to Reconstruct Gold Creek (2870230) Trail Head Parking

[illegible]

Appendix B – Field Notes

Field Notes and Comments from Transportation Planner and Silviculture (4/27/17 IDT Meeting)

Road_No	Proposal	BMP	EMP	Alt_A	Alt_B	Silv. Comments	Engr. Comments
2870000	Road Decommission	19.901	21.4	D		2870000 - Accesses 81 acres of LSR commercial thinning coming online in approx. 2034 .	
2870000	TH Reconstruction	19.9	19.901	TH	3		Reconstruct trailhead parking for Tubal Cain and Dungeness trails; low risk to resources; some tree removal to enable turnaround and parking of horse trailers
2870000	Road Closure/Storage	19.9	21.1		1		ML1 to Silver Creek (low risk); access to stands for silv
2870000	Road Decommission	21.1	21.4		D		Decomm beyond Silver Creek stream crossing
2870030	Road Decommission	0	1.7	D		2870030 - Accesses 70 acres of second commercial thinning of AMA stands commercially thinned in the late 80's, coming online approx 2020 . Also accesses 46 acres of LSR/AMA thinning coming online approx 2028	May have an easement to private parcel; pending response from JN; 1/17/17 email from Joel: keep at a ML1
2870030	Road Closure/Storage	0	0.4	D	1		mod risk w/ 2 stream xings; can mitigate for storage; NEED TO BLOCK ACCESS TO SPUR AT 0.4 TO PROTECT WETLANDS/ACCESS FROM 4X4
2870030	Road Closure/Storage	0.4	1.7		1		low risk; silv access to plantations - storage after treatment
2870150	Road Decommission	0.8	1.4	D		2870150 – (w/2870155), Accesses 85 acres of LSR commercial thinning coming online 2020 , old doghair stand	
2870150	Road Closure/Storage	0.8	1.2		1		low risk; access to stands/plantations for silv; storage after silv treatment - access to rock pit
2870150	Road Decommission	1.2	1.4		D		med risk due to deep fill stream xing at m.p. 1.2; decomm after treatment
2870155	Road Decommission	0	0.5	D	1	2870155 – (w/2870150), Accesses 15 acres of LSR commercial thinning coming online 2020 , old doghair stand	low risk; mitigate 1 stream div potential for storage; access to stands for silv; storage after treatment
2870250	Road Decommission	0	1.6	D			Older stands for CT
2870250	Road Closure/Storage	0	0.9		1	2870250 – Accesses 93 acres of LSR commercial thinning coming online in approx 2035 (40 ac) and 2020 (53 ac).	access to older plantations for CT; waterbarred, stable, low risk; storage after silv completed

2870250	Road Decommission	0.9	1.6		D		access to older plantations for CT; decomm with sidecast pullback after silv completed; moderate risk with slumping sidecast on 60% slopes, granular material in headwaters for Skookum Creek; no deep fills or major stream crossings found
2870300	Road Decommission	0	0.12	D	D		included in CMLG proposal
2875020	Road Decommission	0	0.63	D	1	2875020 – Accesses 80 acres of AMA commercial thinning coming online approx 2030 .	included in CMLG proposal; 2012 Dungeness WRAP; decomm after silv completed - mod risk w/ stream xings
2875070	Road Decommission	0	1.8	D		2875070 – Access to 70 acres LSR commercial thinning at the very end of the road, coming online approx 2025 . Also 46 acres AMA commercial thinning at the beginning of the road. No other stands along this road area legal age for commercial thinning. All too old for LSR thinning.	included in CMLG proposal; 2012 Dungeness WRAP; <u>coordinate closure with treatment of juniper wetland (Cheryl B.)</u>
2875070	Road Closure/Storage	0	1.2		1		low risk; access to older stands/plantations for silv. <i>Add gate for weeds admin access per Cheryl Bartlett (4/28/17)</i>
2875070	Road Decommission	1.2	1.8		D		med risk due to 3 deep fill stream xings beyond m.p. 1.2; decom after silv treatment
2877000	Road Closure/Storage	2.63	4.6	-	1		From scoping comments: closure to add protection to Pat's Prairie; ML1 w/ gate for administrative access to treat invasives per Cheryl B.
2877100	Road Closure/Storage	0	0.3	-	1		From scoping comments: closure to add protection to area from ORV's
2877050	Road Closure/Storage	0	0.2	1	1	2877050 - Accesses 70 acres of old AMA commercial thinning coming online 2020 .	included in CMLG proposal
2877050	Road Decommission	0.2	0.9	D	1		decomm from m.p. 0.2 to property line after silv completed - mod to high risk with several deep fill stream crossings; per 1/17/17 email from Joel Nowack, recommends keeping USFS jurisdiction at a ML1
2877050	Road Decommission	0.9	2.65	D	1		may already be partially decomm'd on WDNR/private; per 1/17/17 email from Joel Nowack, recommends keeping USFS jurisdiction at a ML1

2877090	Road Decommission	0	1.38	D		2877090 – Accesses 44 acres of older AMA commercial thinning candidates, coming online 2020 . Also 23 acres 1991 CC AMA commercial thinning coming online approx 2030 , 32 acres of 1942 stand some AMA/some LSR commercial thinning online 2020 .	<u>included in CMLG proposal</u>
2877090	Road Closure/Storage	0	1.07		1		Rec ML1 to deep fill/stream crossing (low risk); access to stands for silv
2877090	Road Decommission	1.07	1.38		D		Decomm beyond deep fill/stream crossing to washout (med risk)

2878050	Road Decommission	0	0.6	D	D	2878050 – Accesses 53 acres of LSR commercial thinning coming online approx 2040 .	<u>included in CMLG proposal; 2012 Dungeness WRAP; issues w/ invasives; decomm after silv completed - low risk</u>
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2878060	Road Decommission	0	0.8	D	1	2878060 – Accesses 71 acres of AMA commercial thinning coming online approx 2050 .	low risk; silv access to plantations
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2878080	Road Closure/Storage	0	0.72	1	1	2878080 – Accesses 140 acres of AMA commercial thinning stands coming online approx 2030 and 72 acres of AMA commercial thinning stand coming online approx 2016 .	low risk; silv access to plantations
2878080	Road Decommission	0.72	1.04	D	1		low risk; silv access to plantations; decomm after silv

2878081	Road Decommission	0	0.26	D	D	Add on to project list	No ML in INFRA - System shows undetermined; already undriveable 4/27/17 IDT: remove from project; unclassified
2878100	Road Decommission	0.75	1.59	D	D	2878100, 108, 109 – Together, these roads access 81 acres of LSR commercial thinning coming on line in 2034 . Originally doghair regeneration cut in the mid - 1980's, planted and then pre-commercially thinned in approx 2004.	mod risk w/ deep-seated landslide at 0.5
2878108	Road Decommission	0	0.13	D	D	2878100, 108, 109 – Together, these roads access 81 acres of LSR commercial thinning coming on line in 2034 . Originally doghair regeneration cut in the mid - 1980's, planted and then pre-commercially thinned in approx 2004.	
2878109	Road Decommission	0	0.27	D	D	2878100, 108, 109 – Together, these roads access 81 acres of LSR commercial thinning coming on line in 2034 . Originally doghair regeneration cut in the mid - 1980's, planted and then pre-commercially thinned in approx 2004.	
2878110	Road Decommission	0	0.9	D	D	2878110 – Accesses 110 acres which is a mix of AMA/LSR commercial thinning candidates of close ages (30's) and coming online 2030 to 2040 .	<u>included in CMLG proposal; 2012 Dungeness WRAP; decomm after silv completed - mod risk w/ stream xings</u>

2878115	Road Decommission	0	0.14	D	D		Decommission after silv completed
2800120	Road Closure/Storage	0	3	1	1	Dana talked w/ Bill S.; included in 2003 ATM for decomm; remove from project; propose for CMLG or other funding to mitigate impacts to water resources	Rec mitigate diversion potential @ stream crossings for storage; consider keeping access to quarry at m.p. 0.33 / Road is Decom in INFRA and GIS
2800220	Road Closure/Storage	0	1.203	1	1		Rec mitigate diversion potential @ pipe at m.p. 0.53 for storage
2800262	Road Closure/Storage	0	0.6	1	1	Verify 2800260 - see note below	Overgrown; rec mitigate diversion potential @ pipes at m.p. 0.14, 0.19, 0.28
2800280	Road Closure/Storage	0	0.51	1	1		Rec mitigate diversion potential @ wet area & pipe at m.p. 0.04 & 0.16 for storage; surface drainage control needed
2800283	Road Closure/Storage	0	0.3	1	1		Needs surface drainage control for storage
2800290	Road Closure/Storage	0	0.1	1	1		Block at 2800 junction
2800320	Road Closure/Storage	0	2.6	1	1		Low risk to resources; some surface erosion
2800321	Road Closure/Storage	0	1.2	1	1		Rec mitigate diversion potential @ pipes at m.p. 0.12, 0.26, 0.36, 0.38 for storage
2800325	Road Closure/Storage	0	0.57	1	1		Low risk to resources; road in good condition
2820010	Road Closure/Storage	0	3.1	1	1		Rec mitigate diversion potential @ pipes at m.p. 1.0 & 2.3 for storage; needs drainage control beyond m.p. 2.3
2877052	Road Closure/Storage	0	0.29	1	1	2877052 – Accesses 7 acres commercial thinned old AMA, 2nd thin candidate 2020, and 5 acres old AMA commercial thinning candidate coming online 2020 , and 26 acre young AMA commercial thinning coming online 2036 .	<u>included in CMLG proposal</u>
2878085	Road Closure/Storage	0	0.9	1	1		low risk; silv access to plantations
2800260	Road Decommission	0	1.2	1	1	Dana to verify; poss conflict w/ 262 if decomm'd according to original WAP proposal	not on 9/21/16 proposed action list; TCB on end of the road; need access for management; add gate for a driveable ML1; road needs maintenance
2870230	TH Relocation	0	0.01		3		Not on 9/21/16 proposed action list; Construct TH parking area for trailers and larger vehicles at junction with 2870 Road, and cars; need to clear trees; install gate to block access to rest of road (reviewed with Nicole L. 6/29/16)
2870230	TH Relocation	0.01	0.86		C	Possible convert to trail in long run; Justin/Shirley will look at possibility of CT - slope stability concerns	Install gate to block regular vehicle access; continue maintenance for ML2; trail access (reviewed with Nicole L. 6/29/16). Decomm and convert to trail. Timeline?

2870230	Convert to Trail	0.86	1.41		C	Possibly move trail to old road bed out of riparian area; \$123k ERFQ funding may be able to use funds elsewhere if not used here. Need confirmation from Shelmerdine/Henriquez	RECOMMEND Decommission due to large deep-seated landslide and high cost to reconstruct and maintain the road; moderate safety risk to users from unstable slopes; high risk for aquatic resources (toe of slide in Dungeness River) convert to trail (reviewed
2870270	Closure or Decom??	0	1.6	2	2	Kurt A. - prefer to close - need to analyze in project; TCB habitat along most of road length; possibly ML1 at least	4/28/17: Alt_A - boulders to block turnouts and parking; Alt_B - boulders, seasonal closure with gate